

Application No.: 10/658,791

Docket No.: 22129-00003-US2

AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figure 1.

Attachment: Replacement sheet
 Annotated sheet showing changes

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REMARKS

Receipt of the Office Action mailed November 18, 2004 is acknowledged. A replacement sheet for Figure 1 is attached hereto as requested. The present response also includes an amended abstract of the disclosure drafted as a single paragraph. An amendment to the specification is enclosed as well to provide further support for certain language found in originally filed claims. Please substitute the instant amendment to the specification found on page 2 of this paper for the amendment to the specification submitted on October 22, 2004.

Claims 8-10 and 17-18 have been amended in formal regards to correspond with the claims as originally filed. No new matter has been added. Entry of the instant amendments and favorable reconsideration are earnestly solicited.

Claims 8-10, 14, 15, 17 and 18 stand rejected under 35 USC 112, first paragraph as allegedly not being supported in the written description. This rejection is respectfully traversed. In the response filed October 22, 2004, Applicants amended the disclosure to provide support for the claims at issue. This amendment to the specification has been revised here ensure the ranges and units are consistent.

The language the Examiner has noted on page 3 of the Office Action can be found in the original claims of the instant application. Note that claims 14 and 15 are identical to those claims as filed. Claims 8-10 and 17-18 have been amended to conform the ranges and units to those originally claimed. The specification has also been amended accordingly. For the convenience of the Examiner, a listing of the original filed claims 1-18 is set forth immediately below:

1. A brazing sheet comprising an aluminum 3xxx series core alloy wherein at least one side thereof is provided with an aluminum clad material comprising from 0.7-2.0% Mn and 0.7-3.0% Zn, wherein said clad is capable of being used as the inner-liner of a heat exchanger tube product.
2. A brazing sheet of claim 1, wherein one side of said core is provided a material that comprises from 0.7-2.0% Mn and 0.7-3.0% Zn and the other side of said core is provided with an aluminum alloy comprising at least 5.5 % Si.

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3. A brazing sheet comprising a clad brazing alloy, a 3xxx series core alloy and a clad inner-liner alloy, wherein said brazing sheet has the following composition, wherein the percentages expressed in said composition are by weight based on the weight of said brazing sheet:

	Clad Alloy (4xxx series aluminum)	Core(3xxx series Al alloy)	Clad Alloy (Inner-liner)
Si	6.0 – 13%	0.6 max	0.40 max
Fe	0.30 max	0.7 max	0.7 max
Cu	0.10 max	0.1 - 0.7	0.05 – 0.4
Mn	0.10 max	0.8 – 1.7	0.7 – 1.5
Mg	1.8% max	0.15 max	0.05 max
Zn	0.10 max	0.10 max	1.3 – 1.5
Ti	0.05 max	0.10 max	0.05 max
Al	balance	balance	balance

4. A brazing sheet comprising a clad fin stock alloy, a core alloy and a clad inner-liner alloy, wherein said brazing sheet has the following composition, wherein the percentages expressed in said composition are by weight based on the weight of said brazing sheet:

	Clad Alloy (4xxx series aluminum)	Core(3xxx series Al alloy)	Clad Alloy (Inner-liner)
Si	6.0 – 13%	0.6 max	0.40 max
Fe	0.30 max	0.7 max	0.7 max
Cu	0.10 max	0.1 - 0.7	0.05 – 0.4
Mn	0.10 max	0.8 – 1.7	0.7 – 1.5
Mg	1.8% max	0.15 -0.60	0.05 max
Zn	0.10 max	0.10 max	1.3 – 1.5
Ti	0.05 max	0.10 max	0.05 max
Al	balance	balance	balance

5. A heat exchanger tube prepared from a brazing sheet according to claim 1.

6. Tube stock prepared from a sheet according to claim 1.

7. A method for reducing corrosion and /or erosion associated with fluid velocity in the interior of heat exchange tubes comprising: obtaining a brazing sheet material that includes an inner clad layer including from 0.7 – 3.0% Zn and from 0.7-2.0 % Mn and forming a heat exchanger tube wherein said inner clad is present on the interior of said heat exchanger tube.

8. A method according to claim 7, wherein said method imparts a reduction from between 10% to 60% of the erosion/corrosion compared to AA7072 as measured by maximum pit depth in microns for fluid velocity rates from 0.9m/second – 3.0 m/second.

9. A method according to claim 7, wherein said method imparts a reduction from between 10% to 60% of the erosion/corrosion compared to AA7072 as measured by average pit depth in microns for fluid velocity rates up to 5.0 m/second

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10. A method according to claim 7, wherein said method imparts a reduction from between 10% to 60% of the erosion/corrosion compared to AA7072 as measured by maximum pit depth in microns for fluid velocity rates up to 5 m/second.
11. A method according to claim 7, wherein said brazing sheet material includes an outer clad layer comprising at least 5.5% Si.
12. A heat exchanger prepared according to the method of claim 7.
13. A heat exchanger prepared using a brazing sheet according to claim 1.
14. A brazing sheet according to claim 1 that has a thickness of 0.007" - 0.015".
15. A heat exchanger according to claim 12, that has been formed from a brazing sheet having a size of 0.007" - 0.015".
16. A brazing sheet comprising an aluminum 3xxx series core alloy wherein at least one side thereof is provided with an aluminum clad material comprising from greater than 1.0% Mn and wherein said clad is capable of being used as the inner-liner of a heat exchanger tube product.
17. A heat exchanger as claimed in claim 13, that shows substantially no difference in maximum and/or average pit depth after being exposed to fluid velocities from 0.94m/second - 2.36 m/second for 250 hours.
18. Tube stock according to claim 6, wherein said tube stock will have a maximum pit depth of up to 40 microns when exposed to a fluid at a velocity of 2.36m/second for 250 hours.

In view of the above amendment, applicant believes the pending application is in condition for allowance and an early notice to that effect is earnestly solicited.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 22129-00003-US2 from which the undersigned is authorized to draw.

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Should the Examiner have any questions regarding this case, the Examiner is courteously invited to contact the office of the undersigned attorney of record.

Dated: December 22, 2004

Respectfully submitted,

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